WPDES Permit and Nutrient Management Plan Inspection and File Review
U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION 5

Purpose:
Determine compliance with Permit WI-0063061-03-0

Facility:
El-Na Farms, LLC
FOIA Ex. 6 (Personal Priacy)
Algoma, Wisconsin 54201
Kewaunee County
FOIA Ex. 6 (Personal Priacy)

NPDES Permit Number:
WI-0063061-02-0
WI-0063061-03-0

EPA Representatives:
Ben Atkinson, Agronomist 312-353-8243
atkinson.ben@epa.gov

Facility Representatives:
Ex. 6 (Personal Privacy), Owner Ex. 6 (Personal Privacy)
Ex. 6 (Personal Privacy)

Report Prepared by:
Ben Atkinson, Agronomist

Inspector Signature: _____

Approval Date: 9/29/2017

Approver Title: Ryan Bahr, Section 2 Chief, Water Enforcement and Compliance Assurance Branch

Approval Signature: _____

1. BACKGROUND

The purpose of this report is to describe, evaluate, and document EL-NA Dairy, LLC's (Facility) compliance with the Clean Water Act, WPDES Permits WI-0063061-02-0, and Nutrient Management Plans at its Kewaunee, Wisconsin facility. The review was performed pursuant to Section 308(a) of the Federal Water Pollution Control Act, as amended.

The Facility is a dairy farm. It is considered to be a large Concentrated Animal Feeding Operation (CAFO) based on it stabling or confining as many as or more than 700 mature dairy cows or a total of 45 days or more in a 12-month period. The Facility confines approximately 1400 mature cows and 1100 calves/heifers. There is a satellite heifer facility.

This review spans the time during which the Facility was covered under now expired Wisconsin Pollutant Discharge Elimination System Permit No. WI-0063061-02-0. The current Permit No. WI-0063061-03-0 became effective August 1, 2017 and expires July 31, 2022.

This review involved the collection of documents from multiple sources including WDNR offices, WDNR public notice site, and document submittals by the Facility. The primary documents reviewed were Nutrient Management Plans 2012-2016, Annual Nutrient Management Plan Updates 2012-2016, and Annual Reports 2012-2016.

2. PERMIT SECTION 1.6

The Permit, in section 1.6 Nutrient Management, states:

"The permittee shall land apply manure and process wastewater in compliance with the Department approved nutrient management plan, s. NR 243.14 and the terms and conditions of this permit."

NR 243.14(1)(a) states:
"… Subject to additional requirements specified in this section and in a WPDES permit, the land application practices identified in the nutrient management plan shall, at a minimum, conform with the nutrient budgeting, soil test recommendations, application practices and restrictions contained in NRCS Standard 590."

NRCS Standard 590 B. states, among other things,
"To minimize N leaching to groundwater on high permeability soils, or soils with less than 20 inches to bedrock, or soils with less than 12 inches to apparent water table, or within 1000 feet of a municipal well, apply the following applicable management practices:
… 3. When manure is applied in late summer or fall to meet the fertility needs of next year's crop and soil temperatures are greater than 50°F, apply one of the following options:

a. Use a nitrification inhibitor with liquid manure and limit N rate to 120 pounds available N per acre.

b. Delay applications until after September 15 and limit available N rate to 90 pounds per acre.

c. Apply to fields with perennial crops or fall-seeded crops. N application shall not exceed 120 pounds available N per acre or the crop N requirement, whichever is less."

The Table 1 below summarizes applications reported which fail to meet the above requirements due to an N rate in excess of the prescribed limit.

Table 1. Applications not consistent with NRCS 590 V. B, 2.					
Field ID	Date of Application	Crop Year	Lbs. N Applied	Soil Temp	Crop
P2	10/25/2015	2016	127	Above 50	Corn Silage
S-3	10/16/2015	2016	126	Above 50	Corn Grain
PH-1	10/17/2015	2016	104	Above 50	Corn Silage
AW-1	10/19/2015	2016	120	Above 50	Alfalfa Seeding Spring
R2	10/20/2015	2016	139	Above 50	Corn Grain
AM-3	10/20/2015	2016	117	Above 50	Corn Silage
R3	10/21/2015	2016	131	Above 50	Corn Grain
R-1	10/23/2015	2016	93	Above 50	Corn Grain
B-3	8/26/2015	2016	144	Not Reported	Winter Rye (forage) to Corn silage, 30-inch row
B-2	8/26/2015	2016	144	Not Reported	Not Reported
B-5	8/26/2015	2016	144	Not Reported	Not Reported

The Facility's Permit, in section 1.6.6, states that "The permittee is prohibited form surface applying liquid manure during February and March, and is prohibited from surface applying liquid manure on frozen or snow-covered ground except for the following conditions

- The permittee may surface apply liquid manure on frozen or snow covered ground, including during February and March, on an emergency basis in accordance with Table 2 and s. NR 243.14)7)(d) on fields the Department has approved for emergency applications…"

Table 2 of the permit sets a maximum application volume of 7,000 gallons per acre per season for field with 0-2% slopes and 3,500 gallons per acre per winter season for fields with >2-6% slopes.

Table 2 below summarizes applications reported when application volume was greater than those prescribed above.

Table 2. Applications not consistent with Permit Section 1.6.6			
Field ID	Slope (%)	Date	Application Rate(gallons per acre)
M7	4	11/20/2014-12/4/2014	3617
18	4	12/2/2014-12/3/2014	6995
T-1	9	12/3/2014	6595
R2	4	12/4/2014	6442
6	16	10/27/204-11/19/2014	17596

3. Permit Section 1.8

The Facility's Permit, in sections 1.8.3 requires, among other things, sampling of "Sampling Point 001 – Manure Storage 1" at a frequency listed as "2/Discharge" for the parameters listed in the Permit when land application has actually occurred. The Wisconsin Department of Natural Resources informed EPA that this requirement means that the Permittee is to sample two times per month when application occurs.

The Facility's Permit, in sections 1.8.4 requires, among other things, sampling of "Sampling Point 001 – Manure Storage" quarterly for the parameters listed in the Permit when land application has actually occurred.

Table 3. below summarizes those months for which application occurred and the Facility did not meet the 2 sample requirement. Table 4. below summarizes those quarters for which application occurred and the Facility did not meet the quarterly sampling requirement when application occurred.

Table 3. Failures to meet Permit Section 1.8.3 Sampling Requirements		
Month	Application from Sampling Point 001 - Manure Storage 1	Number of Sampling Events
Jan-12	x	0
May-12	x	1
Jul-12	x	0
Dec-12	x	0
Apr-13	x	0
Aug-13	x	0
Oct-13	x	0
Dec-13	x	1
Jan-14	x	0
Apr-14	x	0
May-14	x	1
Jun-14	x	0
Jul-14	x	1
Oct-14	x	0
Nov-14	x	0

Table 3 Continued		
Month	Application from Sampling Point 001 - Manure Storage 1	Number of Sampling Events
Feb-15	x	0
Mar-15	x	1
Apr-15	x	0
Jun-15	x	
Jul-15	x	0
Aug-15	x	1
Dec-15	x	0

Table 4. Failures to meet Permit Section 1.8.4 Sampling Requirements		
	Solid Manure Application	Number of Sampling Events
1st Quarter 2012	x	0
2nd Quarter 2012	x	0
3rd Quarter 2012	x	0
2nd Quarter 2013	x	0
1st Quarter 2014	x	0
2nd Quarter 2014	x	0
4th Quarter 2014	x	0
1st Quarter 2015	x	0
2nd Quarter 2015	x	0
3rd Quarter 2015	x	0
4th Quarter 2015	x	0

Additionally, the Facility's Permit, in sections 1.8.3 and 1.8.4 requires, among other things:

"The permittee shall document all discharge and monitoring activities on a daily log report form 3200-123A or a Department approved equivalent log sheet. Originals of the daily log reports shall be kept by the permittee as described under Record Keeping and Retention in the Standard Requirements section, and if requested, made available to the Department."

And

"The permittee shall submit an Annual Report, including Form 3200-123 or a Department approved equivalent, that summarizes all land spreading activities and includes the information identified below, the lab analyses of the manure and other waste land spread, the "T" compliance worksheet for all fields, and the soil test frequency in the past four years. The Annual Report is due each year by the date specified in the Schedules section of this permit. Nitrogen and phosphorus from all sources applied to a given field, including commercial fertilizers, shall be included in the 'Total Nitrogen, and 'Total Phosphorus' sections of the Annual Report"

See section 4 of this report for further information regarding the Annual Reporting requirements.

4. Permit Section 3

4.1 Recording of Sampling Results

The Facility's Permit, in Section 3.1.9, requires certain information to be recorded for each manure, process wastewater or soil sample taken by the permittee. This information includes:

1) "The date, exact place, method and time of sampling or measurements"
2) "The individual or lab that performed the sampling or measurements"
3) "The date of the analysis was performed"
4) "The individual who performed the analysis"
5) "The analytical techniques or methods used"
6) "The results of the analysis"

For crop years 2012-2016, the following information was missing the soil sampling information:

1) The individual or lab that performed the sampling.

For crop years 2012-2016, the following information is missing from the manure sampling information:

1) Exact place, method and time of sampling or measurements.

4.2 Annual Reports

The Facility's Permit, in section 3.2.10, states that:
"The permittee shall submit the following reports in accordance with s. NR 243.19(3)
…
Annual Reports: The permittee shall submit written annual reports to the department by the date specified in the Schedules section of permit for all manure and other process wastewater that is generated by the permittee. These annual reports shall cover quarterly reports, annual spreading activities and other information required in s. NR 243.19(3) for the previous calendar year or cropping year, as specified in this permit"

The Schedules section of the Permit calls for the submittal of the Annual Reports by January 31st of each year.

For crop years 2012-2016, the Annual Reports did not include an annual spreading report summarizing manure and other process wastewater land application activities using form 3200-123 or a department-approved equivalent as required by s. NR243.19(3)(C). Some, but not all, of the information required by s. NR 243.19(3) to be included on form 3200-123 or a department-approved equivalent was submitted with the Annual Nutrient Management Plan Update each year. In crop years 2013-2016, the Facility submitted a report entitled "DNR CAFO Annual Spreading Report" with its Annual Nutrient Management Plan Update. This report does not contain all of the information that is required by permit and included on Form

3200-123. Information required by the permit and included on Form 3200-123 but not reported by the facility on the "DNR CAFO Annual Spreading Report" includes:

1) Date of Application
2) Acres Applied
3) Soil Test P Average
4) Legume Nitrogen Credit
5) Second Year Manure Credit
6) Additional Fertilizer: Nitrogen
7) Additional Fertilizer: P_2O_5
8) Soil Conditions
9) Banked
10) Field Restrictions

It is possible to find much, but not all, of the missing information in other reports submitted with Annual NMP Updates. Table 5, below, indicates where the missing information can be found and any concerns with the information.

Table 5: Location of Information Missing from DNR CAFO Annual Spreading Report

Missing Parameter	**Location in Annual Nutrient Management Plan Update**	**Information Concerns**
Date of Application	Generally found in the Daily Application Logs submitted by the Facility with Annual NMP Updates.	Multiple instances of applications listed on either the "DNR CAFO Annual Spreading Report" or the Daily Application Logs missing from the other. See Table 6.
Acres Applied	Generally found in the Daily Application Logs submitted by the Facility with Annual NMP Updates.	
Soil Test P Average	SnapPlus Field Data and 590 Assessment Plan.	
Additional Fertilizer: Nitrogen	SnapPlus Spreading Plan Report.	Unclear if reported fertilizer applications and rates are planned or actual.
Additional Fertilizer: P2O5	SnapPlus Spreading Plan Report.	Unclear if reported fertilizer applications and rates are planned or actual.
Soil Conditions	Annual Spreading Log.	Terms used in the report do not match those in the form 3200-123A.
Field Restrictions	SnapPlus Field Data and 590 Assessment Plan.	

Table 6, below, summarizes for crop years 2015 and 2016 application events which are recorded in either the DNR CAFO Annual Spreading Report or the submitted Daily Application Logs but not found in both.

Table 6. Applications missing from application reports.

Field ID	Date of Application	Crop Year	Missing From
7	unknown	2016	Daily Logs
9	unknown	2016	Daily Logs
A-1	Unknown	2016	Daily Logs
AW-2	unknown	2016	Daily Logs
AW-4	unknown	2016	Daily Logs
BR-3	Unknown	2016	Daily Logs
F-1	unknown	2016	Daily Logs
H-1	unknown	2016	Daily Logs
H-2	unknown	2016	Daily Logs
H-3	unknown	2016	Daily Logs
H-4	unknown	2016	Daily Logs
H-5	unknown	2016	Daily Logs
H-8	unknown	2016	Daily Logs
HV-1	unknown	2016	Daily Logs
HV-3	unknown	2016	Daily Logs
HV-3	unknown	2016	Daily Logs
HV-5	unknown	2016	Daily Logs
HV-7	unknown	2016	Daily Logs
HV-7	unknown	2016	Daily Logs
JE-2	unknown	2016	Daily Logs
K-1	unknown	2016	Daily Logs
K-1	unknown	2016	Daily Logs
M-2	unknown	2016	Daily Logs
M-3	unknown	2016	Daily Logs
M-4	unknown	2016	Daily Logs
MP-1	unknown	2016	Daily Logs
MP-1	unknown	2016	Daily Logs
MP-1	unknown	2016	Daily Logs
S-2	unknown	2016	Daily Logs
S-2	unknown	2016	Daily Logs
SCH-4	unknown	2016	Daily Logs
SCH-5	unknown	2016	Daily Logs
ST-4	unknown	2016	Daily Logs
T-4	unknown	2016	Daily Logs

Table 6 continued			
Field ID	Date of Application	Crop Year	Missing From
TH-10	unknown	2016	Daily Logs
TH-12-13	unknown	2016	Daily Logs
TH-4	unknown	2016	Daily Logs
TH-15	unknown	2016	Daily Logs
TH-16-17	unknown	2016	Daily Logs
TH-22	unknown	2016	Daily Logs
TH-24	unknown	2016	Daily Logs
TH-26	unknown	2016	Daily Logs
TH-27	unknown	2016	Daily Logs
TH-5	unknown	2016	Daily Logs
TH-6	unknown	2016	Daily Logs
TH-7	unknown	2016	Daily Logs
TH-9	unknown	2016	Daily Logs
V-1	unknown	2016	Daily Logs
V1	unknown	2016	Daily Logs
V-2	unknown	2016	Daily Logs
Z-2	unknown	2016	Daily Logs
Z-2	unknown	2016	Daily Logs
Z-2	unknown	2016	Daily Logs
Z-3	unknown	2016	Daily Logs
Z-3	unknown	2016	Daily Logs
Z-3	unknown	2016	Daily Logs
18	12/2/2014	2015	Spreading Report
T-5	9/17/2014	2015	Spreading Report
Z-1	10/2/2014	Unknown	Spreading Report
F-3	10/2/2014	Unknown	Spreading Report
8	unknown	2015	Daily Logs
8	unknown	2015	Daily Logs
9	unknown	2015	Daily Logs
9	unknown	2015	Daily Logs
12	unknown	2015	Daily Logs
12	unknown	2015	Daily Logs
14	unknown	2015	Daily Logs
16	unknown	2015	Daily Logs
17	unknown	2015	Daily Logs
AM-3	unknown	2015	Daily Logs
AM-3	unknown	2015	Daily Logs
AW-1	unknown	2015	Daily Logs

Table 6 continued			
Field ID	Date of Application	Crop Year	Missing From
CR-2	unknown	2015	Daily Logs
CR-2	unknown	2015	Daily Logs
CR-2	unknown	2015	Daily Logs
H-3	unknown	2015	Daily Logs
HV-3	unknown	2015	Daily Logs
HV-4	unknown	2015	Daily Logs
HV-5	unknown	2015	Daily Logs
J-3	unknown	2015	Daily Logs
K-1	unknown	2015	Daily Logs
M-1	unknown	2015	Daily Logs
M-1	unknown	2015	Daily Logs
M-1	unknown	2015	Daily Logs
M-2	unknown	2015	Daily Logs
M-2	unknown	2015	Daily Logs
P-07	unknown	2015	Daily Logs
P-07	unknown	2015	Daily Logs
P-12	unknown	2015	Daily Logs
PH-3	unknown	2015	Daily Logs
S-1	unknown	2015	Daily Logs
S-1	unknown	2015	Daily Logs
SCH-3	unknown	2015	Daily Logs
SCH-4	unknown	2015	Daily Logs
SCH-4	unknown	2015	Daily Logs
SCH-5	unknown	2015	Daily Logs
SH-3	unknown	2015	Daily Logs
T-4	unknown	2015	Daily Logs
V-1	unknown	2015	Daily Logs
7	11/19/2015	2016	Spreading Report
Y-1	4/7/2015	2015	Spreading Report
Y-1	4/7/2015	2015	Spreading Report

5. Areas of Concern

The following are areas of concern based on the above review:

1) In at least 11 instances in 2016, the Facility applied manure exceeding the allowable manure nitrogen application rate to fields identified as having a high potential for nitrogen leaching to groundwater. (Permit section 1.6, s. NR 243.14(1)(a), and NRCS Standard 590 Section V. B 2.)

2) In at least 5 instances, the Facility exceeded maximum allowable liquid manure application volume to fields when surface applying on an emergency basis on frozen or snow covered ground. (Permit section 1.6.6.)

3) In at least 22 instances, the Facility did not collect and analyze the required 2 monthly samples in months during which liquid manure application occurred. (Permit section 1.8.3.)

4) In at least 11 instances, the Facility did not collect and analyze the required 2 quarterly samples in quarters during which solid manure application occurred. Permit in section 1.8.4

5) In 4 instances, the Facility did not submit an annual spreading report summarizing manure and other process wastewater land application activities using form 3200-123 or a department-approved equivalent with the annual report. (Permit section 3.2.10 and s. NR 243.19(3).)

6) The information regarding manure applications provided in the Annual Nutrient Management Plan Update for crop years 2015 and 2016 was found to have inconsistencies between the Daily Logs and the DNR CAFO Annual Spreading Reports on 102 instances.